GSM/GPRS/GPS Tracker **GV65Lite**

User Manual

TRACGV65LiteUM001

Revision: 1.01



http://www.queclink.com

sales@queclink.com

Document Title	GV65Lite User Manual
Version	1.01
Date	2013-12-09
Status	Release
Document Control ID	TRACGV65LiteUM001

General Notes

Queclink offers this information as a service to its customers, to support application and engineering efforts that use the products designed by Queclink. The information provided is based upon requirements specifically provided to Queclink by the customers. Queclink has not undertaken any independent search for additional relevant information, including any information that may be in the customer's possession. Furthermore, system validation of this product designed by Queclink within a larger electronic system remains the responsibility of the customer or the customer's system integrator. All specifications supplied herein are subject to change.

Contents

Table Index

Figure Index

0 Revision History

Revision	Date	Author	Description of change
1.01	2013-12-2	Richard Deng	Initial

1 Introduction

The GV65Lite is a powerful GPS locator designed for vehicle or asset tracking. It has superior receiver sensitivity, fast TTFF (Time to First Fix) and supports Quad-Band GSM frequencies 850/900/1800/1900, its location can be monitored in real time or be periodically tracked by a backend server or other specified terminals. The GV65Lite has multiple input/output interfaces that can be used for monitoring or controlling external devices. Based on the integrated @Track protocol, the GV65Lite can communicate with a backend server through the GPRS/GSM network to transfer reports of Emergency, geo-fence boundary crossings, scheduled GPS position as well as many other useful functions. Users can also use GV65Lite to monitor the status of a vehicle and control the vehicle by its external relay output. System Integrators can easily setup their tracking systems based on the full-featured @Track protocol.

1.1. Reference

Table 1. GV65Lite Protocol Reference

SN	Document name	Remark
[1]	GV65Lite @Track Air Interface Protocol	The air protocol interface between GV65Lite and backend server.

1.2. Terms and Abbreviations

Table 2. Terms and Abbreviations

Abbreviation	Description
AGND	Analog Ground
AIN	Analog Input
DIN	Digital Input
DOUT	Digital Output
GND	Ground
MIC	Microphone
RXD	Receive Data
TXD	Transmit Data
SPKN	Speaker Negative
SPKP	Speaker Positive

2 Product Overview

2.1. Check Part List

Before starting, check all the following items have been included with your GV65Lite. If anything is missing, please contact your supplier.



Figure 1.   Appearance of GV65Lite

2.2. **Parts List**

Table 3. Part List

Name	Picture
GV65Lite Locator	73mm*54mm*22.7mm
User Cable	
GPS Antenna (Optional)	
DATA_CABLE_M (Optional)	

2.3. **Interface Definition**

The GV65Lite has a 10 PIN interface connector. It contains the connections for power, I/O, etc. The sequence and definition of the 10PIN connector are shown in following figure:



Figure 2. The 10 PIN connector on the GV65Lite

Table 4. Description of 10 PIN Connections

Index	Description	Comment
1	VIN	External DC power input, 8-32V
2	GND	GND
3	OUT2	Open drain, 150mA max
4	ADC_IN	Fuel ADC input
5	OUT1	Open drain, 150mA max ,with latch circuit
6	DATA_1W	1-wire data bus
7	/IN2	Digital input, negative trigger
8	/IN1	Digital input, negative trigger
9	IGN	Ignition input, positive trigger
10	VDD_1W	1-wire device power output

2.4. **GV65Lite User Cable Colour**

Table 5. GV65Lite User Cable Colour definition

Definition	Colour	PIN No	Cable	PIN No	Colour	Definition
GND	Black	2		1	Red	VIN
ADC_IN	Green	4		3	Yellow	OUT2
DATA_1W	White/Black	6		5	Blue	OUT1
/IN1	Orange	8		7	Orange/Black	/IN2
VDD_1W	Purple	10		9	White	IGN

3 Getting Started

3.1. Opening the Case



Figure 3. Opening the Case

Insert the triangular-pry-opener into the gap on both sides of the case as shown above, push the opener up until the case unsnapped.

3.2. Closing the Case



Figure 4. Closing the Case

Place the cover on the bottom in the position as shown in the above figure. Press the front case and the back case until it snapped.

3.3. **Installing a SIM Card**

Open the case and ensure the unit is not powered (unplug the 10Pin cable). Slide the holder right to open the SIM card. Insert the SIM card into the holder as shown below with the gold-colored contact area facing down taking care to align the cut mark. Close the SIM card holder. Close the case.



Figure 5. SIM Card Installation

3.4. **Installing the External GPS Antenna (Optional)**

There is a SMA GPS antenna connector on GV65Lite. The GV65Lite will automatically detect and use an external antenna when connected.



Figure 6. The External GPS Antenna of GV65Lite

3.4.1. GPS Antenna Specification

Table 6. GPS Antenna Specification

GPS antenna:	Frequency: 1575.42MHz
Bandwidth:	>5MHz
Beam width:	>120 deg
Supply voltage:	2.7V-3.3V
Polarization:	RHCP
Gain:	Passive: 0dBi min Active: 15dB
Impedance:	50Ω
VSWR:	<2
Noise figure:	<3

3.5. Power Connection

VIN (PIN1) / GND (PIN2) are the power input pins. The input voltage range for this device is from 8V to 32V. The device is designed to be installed in vehicles that operate on 12V or 24V systems without the need for external transformers.

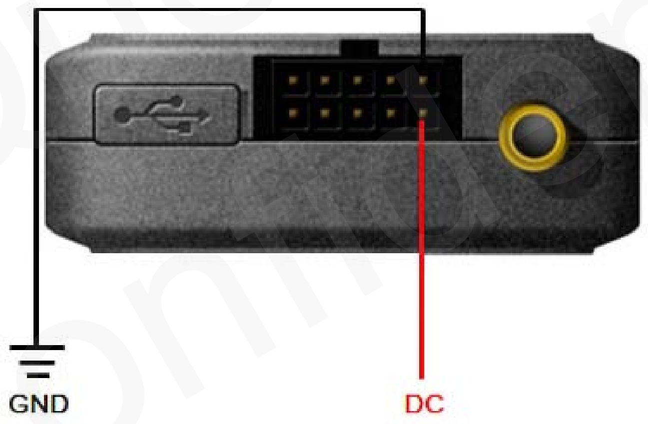


Figure 7. Typical Power Connection

3.6. Ignition Detection

Table 7. Electrical Characteristics of Ignition Detection

Logical State	Electrical State
Active	5.0V to 32V
Inactive	0V to 3V or Open

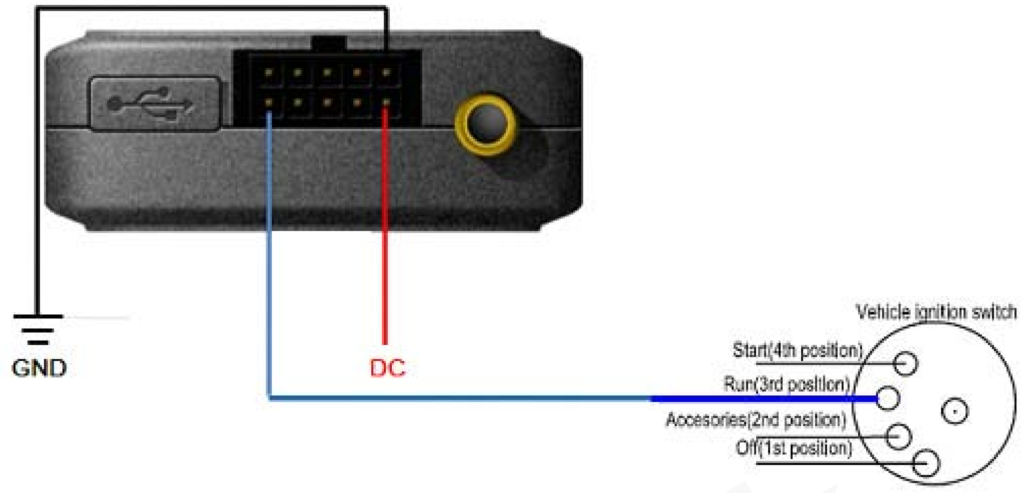


Figure 8. Typical Ignition Detection

IGN (Pin9) is used for ignition detection. It is strongly recommended to connect this pin to ignition key "RUN" position as shown up.

An alternative to connecting to the ignition switch is to find a non permanent power source that is only available when the vehicle is running. For example the power source for the FM radio.

IGN signal can be configured to start transmitting information to backend server when ignition is on; and enter power saving mode when ignition is off.

3.7. Digital Inputs

There are two general purpose digital inputs on GV65Lite. They are all negative trigger.

Table 8. Electrical Characteristics of the digital inputs

Logical State	Electrical Characteristics
Active	0V to 0.8V
Inactive	Open

The following diagram shows the recommended connection of two digital inputs.

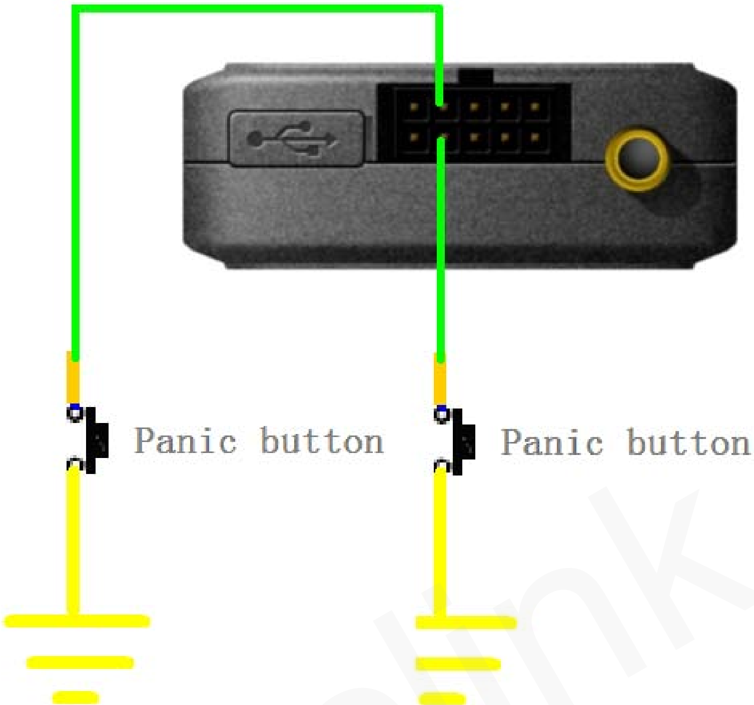


Figure 9. Typical Digital Input Connection

3.8. Analog Inputs

There is one analog input on GV65Lite, the analog input voltage range could be selectable, it includes 0-12V and 0-30V, and the default range is from 0 to 30V. The following diagram shows the recommended connection.

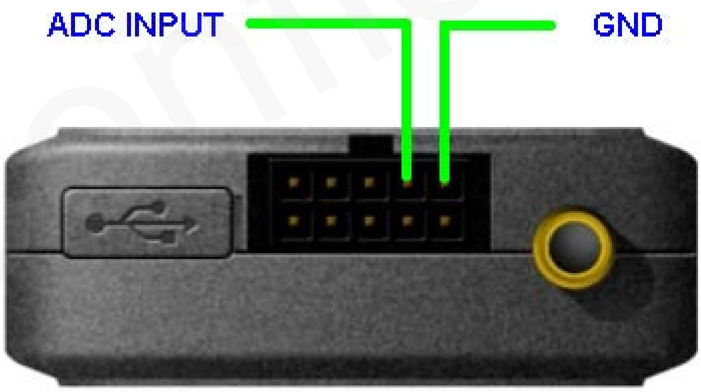


Figure 10. Typical Digital Input Connection

3.9. Digital Outputs

There are two digital outputs on GV65Lite. All are of open drain type and the maximum drain current is 150mA. Each output has the built-in over current and recovery PTC fuse.

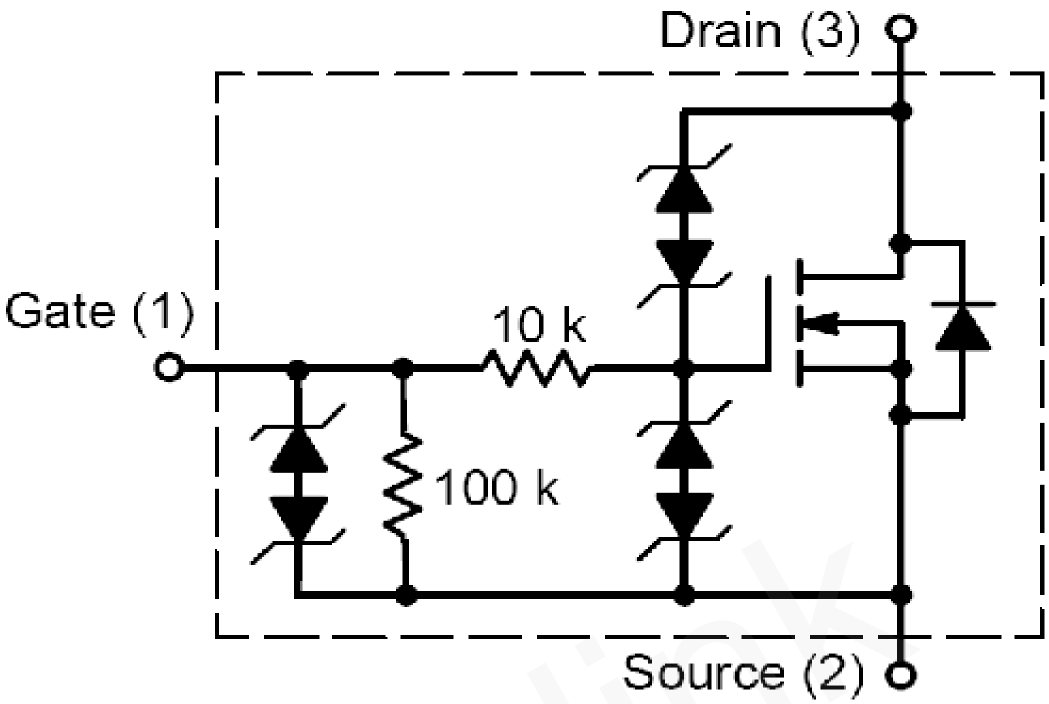


Figure 11. Digital Output Internal Drive Circuit

Table 9. Electrical Characteristics of Ddigital Outputs

Logical State	Electrical Characteristics
Enable	<1.5V @150mA
Disable	Open drain

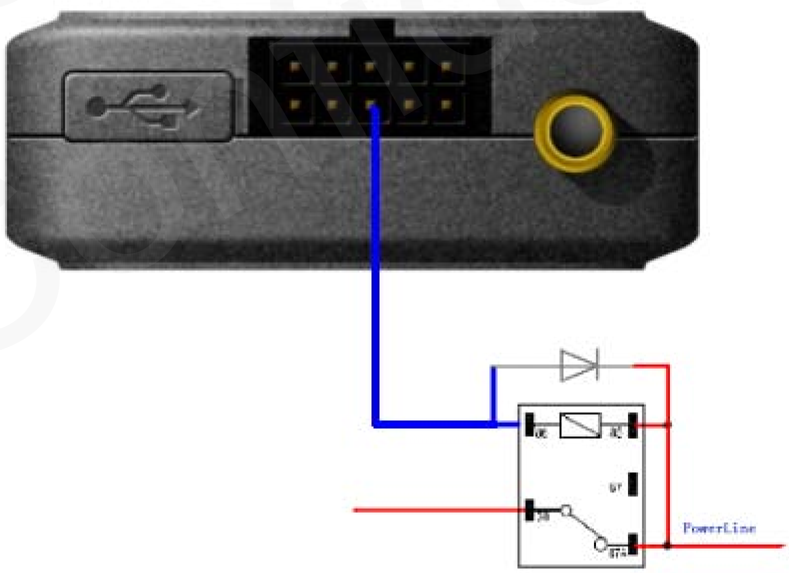


Figure 12. Typical Connection with Relay

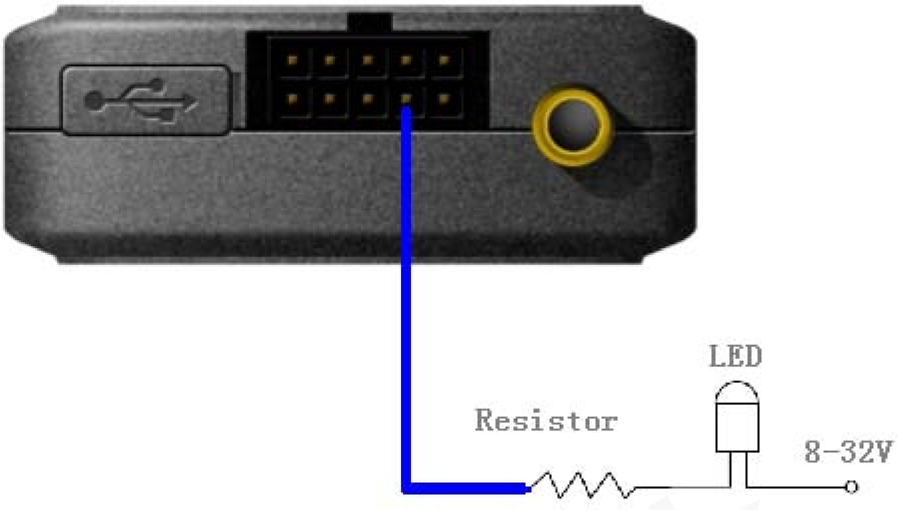


Figure 13. Typical Connection with LED

Note:

1 - OUT1 will latch the output state during reset.

2- All outputs are internally without pulled up to PWR pin by a diode. So an external flyback diode is needed when the output is connected to an inductive load.

3.10. Device Status LED



Figure 14. GV65Lite LED on the Case

GV65Lite has three status led that CEL GPS PWR led.

Table 10. Definition of Device status and LED

LED	Device status	LED status
GSM (note1)	Device is searching GSM network	Fast flashing (Note3)
	Device has registered to GSM network.	Slow flashing (Note4)
	SIM card needs pin code to unlock.	ON
GPS (note 2)	GPS chip is powered off	OFF
	GPS sends no data or data format error.	Slow flashing
	GPS chip is searching GPS info.	Fast flashing
	GPS chip has gotten GPS info.	ON
PWR (note 2)	No external power and internal battery voltage is lower than 3.35V.	OFF
	No external power and internal battery voltage is below 3.5V.	Slow flashing
	External power in and internal battery is charging	Fast flashing
	External power in and internal battery is fully charged	ON

Note:

1 - GSM LED cannot be configured.

2 - GPS LED and PWR LED can be configured to turn off after a period of time using the configuration tool.

3 - Fast flashing is about 60ms ON/ 780ms OFF.

4 - Slow flashing is about 60ms ON/ 1940ms OFF.